Santiago Sánchez-Pagés on 'Who is the fairest of them all?'

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Focus paper

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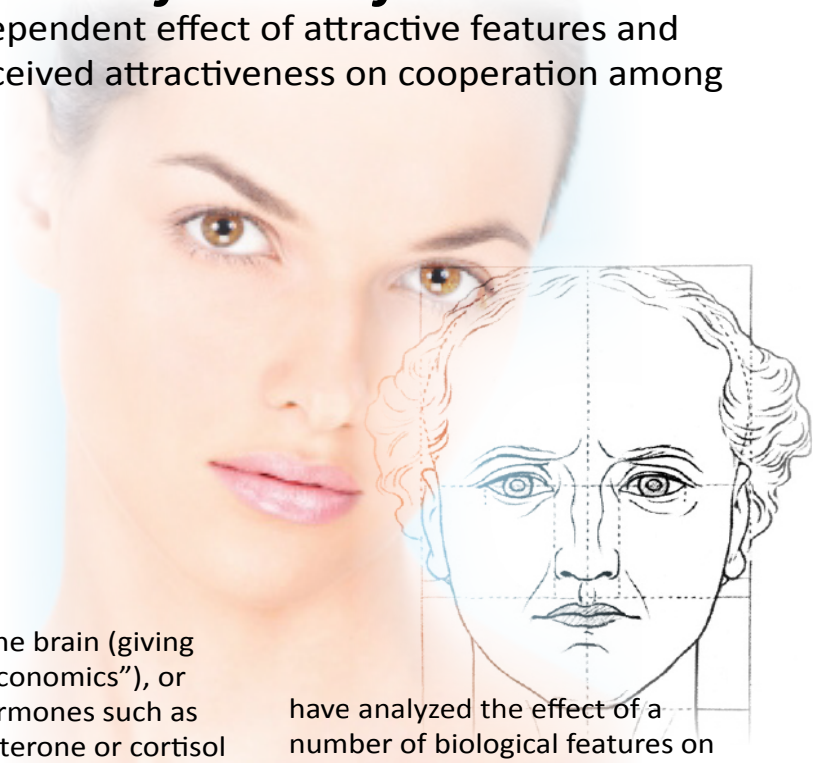
Who is the fairest of them all?

The independent effect of attractive features and self-perceived attractiveness on cooperation among women.



One of the main developments in Economics in the last decade has been the so-called "Behavioral revolution", with experimental methods becoming part of mainstream Economics. Experimental studies have shown that the predictions of standard economic theories are often wrong. Some people see this as a confirmation of their belief that Economics is a fundamentally flawed discipline. But, to the contrary, these experimental results strengthen our understanding of economic decisions and provide economists with new insights which are helping them to construct better theories.

One of the more fertile areas spawned by this behavioral revolution is the study of the biological foundations of economic behavior. Studies in this field are the result of cross-pollination between Economics, Biology and Psychology. Researchers from these different disciplines have teamed up to analyse, for instance, the relationship between economic decisions and the activity of the brain (giving rise to "Neuroeconomics"), or the effect of hormones such as oxytocin, testosterone or cortisol on economic behaviours such as cooperation, bargaining or investment under uncertainty. The influence of biological features, such as hormone levels or morphometric characteristics (related to measures of the human body) on behavior is well known in Biology. It is only recently that this relationship has become an object of study in Economics. Santiago Sanchez-Pages, in collaboration with biologist Enrique Turiegano, has been studying the influence of a number of biological features on human cooperation. They have employed simple anonymous one-shot Prisoners' Dilemmas (PD), probably the most well-known economic game. The PD captures, in a simple interaction, the frequent tensions between individual interest and collective good. The PD can be used to model a wide variety of contexts from team-work to tax evasion, from arm races to price wars. In their most recent paper, Sanchez-Pages and Turiegano have analyzed the effect of a number of biological features on cooperation among women, thus complementing their previous work for the case men. Together, these two studies shed an interesting light on the biological underpinnings of cooperation among humans.

Facial symmetry

Faces play an extremely important role in economic interactions such as negotiations or workplace relations. Often unconsciously, we look at other people's faces in order to ascertain whether they are trustworthy, honest or reliable. The reason for this habit is that facial shapes can inform us of fundamental physiological attributes. One of the individual features studied by Sanchez-Pages and Turiégano has this

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ⓘ Sanchez-Pages, S, & Turiegano, E. (2010). Testosterone, facial symmetry and cooperation in the Prisoners' dilemma. Physiology & Behavior, 99, 355-361.

attribute: facial symmetry (FS) FS is related to the ability of organisms to develop and to overcome negative external influences. One can think of our genes as a blueprint. They tell us that our body should have a nose, one eye on each side of it, two legs, etc. But constructing a body is an extremely intricate and complex business which can go wrong in many ways, most often tiny and irrelevant. The more these "mistakes" the less symmetric a body is. That is why FS can be used as a proxy of how well our development process followed our genetic blueprint. From the classics we know that symmetry is beauty. And it is so for a good reason: We have "learned" through evolution to feel attracted to symmetric faces because they tend to correspond to more genetically fit individuals, that is, to better partners. Sanchez-Pages has shown that individuals with high FS are less cooperative than asymmetric individuals. And this holds both for men and women. One possible explanation for this result is that, given that FS is a marker of "genetic quality," symmetric individuals depend less on maintaining a good relationship with their social environment, and, hence, are less prone to sacrifice personal benefits in favour of others. For men, this negative effect of FS on cooperation operates through the belief on the cooperative intent of their counterpart. Facially asymmetric men are more likely to expect their counterpart to cooperate. In response to that belief, they often cooperate as well. This however runs against the standard economic prediction for the PD. In that game, the standard theory would say, it is in your individual interest not to cooperate, regardless of what the other person does. One can conclude then that symmetric men are the true homo economicus.

Body shapes

In their recent study with women, Sanchez-Pages and Turiegano explore another measure linked to genetic fitness: the Waist-Hip Ratio (WHR). This measure results from dividing the waist perimeter by the hip perimeter. WHR is associated with both health and fertility. Women with ratios around 0.70 are less likely to develop serious illness, such as diabetes, cardiovascular disorders and ovarian cancer. Women with values of WHR of 0.80 or higher have significantly lower pregnancy rates than the rest. Again, this explains why women with a WHR around 0.70 are classified as the most attractive by men in most cultures: they are ideal mating partners.

But contrary to what might be expected, women with low WHR cooperate more often. This is surprising because, following the reasoning above, these women have better genetic fitness, which should lead them to cooperate less frequently. To understand this surprising result, Sanchez-Pages and co-authors use again the belief stated by subjects about the cooperative intent of their counterpart. They find that women with high WHR are less likely to expect their counterpart to cooperate, explaining why they cooperate less often than women with low WHR. This helps to explain their finding: experimental psychologists have already shown that high WHR women are more likely to display distrust and hostility and to feel social anxiety and low social status.

Attractiveness and a potential confound

The reader may argue at this point that if both high FS and low WHR people are perceived as more attractive that should shape their behavior and expectations. We all know that attractiveness affects individuals in their everyday life. Attractive individuals attract considerable attention and are often better treated by others. This could bring up a potential confound: the results observed by Sanchez-Pages and co-authors might be due to perceived attractiveness which subsequently affects behavior. In order to control for this possibility, they included a score of self-perceived attractiveness (SPA) in their study.

Previous results show that women, who find themselves attractive, are less cooperative. Hence, the SPA score allows them to test whether FS and WHR influence cooperative behavior directly or through their effect on self-perceived attractiveness.

As expected, they obtain that a higher SPA score associates with less cooperative behavior. But when they include this score in their overall analysis, both FS and WHR remain significant predictors of behavior. This shows that these two measures of attractiveness, "objective" and self-perceived, despite being correlated, have independent effects on cooperation. This is an intriguing result. The next step will be to understand better the mechanisms behind it.